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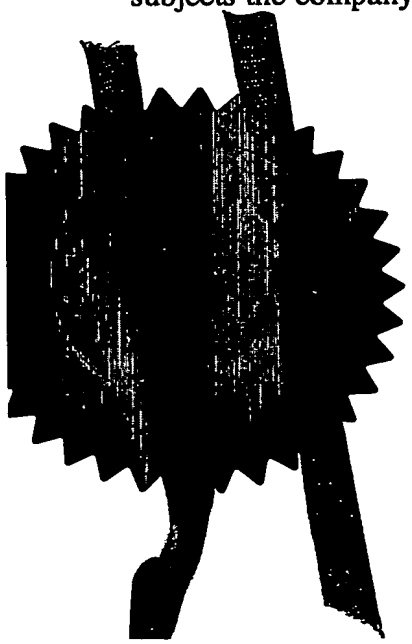

Signed

Dated 2 December 2003

Patents Form 1/77

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P01/7700 0.00-0226238.4

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

The Patent Office

Cardiff Road
Newport
South Wales
NP10 8QQ

1. Your reference — P015668GB

2. Parent application number *(The Patent Office will fill in this part)* — 0226238.4 — 11 NOV 2002

3. Full name, address and postcode of the or of each applicant *(underline all surnames)*

INTELLPROP LIMITED
PO BOX 626
NATIONAL WESTMINSTER HOUSE
LE TRUCHOT ST PETER PORT
GUERNSEY

Patents ADP number *(if you know it)* 6894604001

If the applicant is a corporate body, give the country/state of its incorporation — A GUERNSEY COMPANY

4. Title of the invention — TELECOMMUNICATIONS SERVICES APPARATUS

5. Name of your agent *(if you have one)* — D Young & Co

"Address for service" in the United Kingdom to which all correspondence should be sent *(including the postcode)*

21 New Fetter Lane
London
EC4A 1DA

Patents ADP number *(if you know it)* — 59006

6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and *(if you know it)* the or each application number

Country	Priority application number *(if you know it)*	Date of filing *(day / month / year)*

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application	Date of filing *(day / month / year)*

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? *(Answer 'Yes' if:*

a) any applicant named in part 3 is not an inventor, or
b) there is an inventor who is not named as an applicant, or
c) any named applicant is a corporate body.
See note (d))

Yes

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9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form	NONE
Description	5
Claim(s)	0
Abstract	0
Drawing(s)	1

10. If you are also filing any of the following, state how many against each item.

Priority documents	0
Translations of priority documents	0
Statement of inventorship and right to grant of a patent *(Patents Form 7/77)*	2 1 only
Request for preliminary examination and search *(Patents Form 9/77)*	0
Request for substantive examination *(Patents Form 10/77)*	0
Any other documents *(please specify)*	Facsimile Letter Dated 11 November 2002

11. I/We request the grant of a patent on the basis of this application.

Signature D Young & Co | Date 11.11.02

D Young & Co (Agents for the Applicants)

12. Name and daytime telephone number of person to contact in the United Kingdom: Richard Pratt 023 8071 9500

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TELECOMMUNICATIONS SERVICES APPARATUS

This invention concerns the field of mobile telephone networks and messaging services.

Messaging on mobile networks, and in particular text messaging, has grown significantly since its introduction. It is foreseen that in the future, advanced services will continue to fuel this growth as users find that the mobile terminal becomes increasingly useful for a variety of aspects of communication and information retrieval.

Currently, the predominant usage of messaging services on mobile networks is for person to person text messaging, which in the case of GSM networks is supported by the Short Message Service (SMS.) Comparable messaging technologies exist for other mobile network architectures, and next generation messaging systems for GSM (Enhanced Messaging Services EMS, and Multimedia Messaging Services MMS) are being introduced, and collectively these are hereon referred to as text messaging services.

Some value-added text messaging services may require a user to send a text message to a specified number or short code, causing the network to process the message according to the service specified by the number. This might be for example to process the message in some way, possibly transforming certain aspects of its addressing or content, before onward delivering it to its destination. Alternatively for some applications the network may direct the transformed message back to the originating user. This latter case is dealt with in co-pending application GB0219489.2.

Other uses of text messaging services include person to Host, and Host to person, where a Host is a network equipment or third party equipment designed to source and/or sink text messages. Hosts typically provide message collection facilities for voting events, competitions or information services and/or message source facilities for subscription services or advertising.

It is common for SMS Hosts to have the capability to specify an alphanumeric CLI for host-originated traffic, such that when messages are delivered to the handsets of recipients, the message is displayed as originating from a name rather than just a normal numeric MSISDN CLI. This feature is commonly used for advertising, promotional or network-related messaging such as voice-mail alerts.

It is not possible in current GSM networks for users to be able to specify an alphanumeric CLI when originating messages from their handsets; this feature is restricted to Hosts. One of the reasons for this is that the mobile originated path between handset and SMSC in GSM is not specified to be able to carry an alphanumeric CLI, whereas the mobile terminated paths from Host to SMSC and SMSC to destination handset use a different message format that does support alphanumeric CLI.

The present invention solves the problem that users cannot currently specify alphanumeric CLIs on messages that they originate from their mobile handsets. The ability to present an originating name that can be selected spontaneously and used to convey emotion, humour, fun etc. adds a new dimension to the already enormously popular text messaging service. The invention opens up this possibility to all of the huge installed base of existing text-message capable handsets that are in service.

According to the present invention there is provided apparatus within a telephone network operable to identify a text message by means of characteristics of the text message as belonging to a category of text messages, to transform characteristics of such an identified text message according to characteristics of the said text message, and to onward deliver the transformed text message to its destination.

In this context, characteristics of the text message include but are not limited to addressing, content and user configurable settings. The message forwarded to the recipient could have its source address modified to be an address representative of the sender. The message may be originated by a user within the home network or by a user that is roaming, as the equipment may be so placed in the home network so as to intercept all mobile originated messaging traffic from subscribers of the network whether they be roaming or not.

Preferably the implementation of the apparatus can identify a category of text message while the message is still in Mobile Originated MO form, i.e. as it enters the network and before it arrives at a Short Message Service Centre (SMSC.) For GSM this architecture is readily achievable by means of SMS Routers, which are normally placed in a network so as to carry and selectively route all MO text traffic. The SMS Routers can implement the function of identifying a category of text messages and can route these messages selectively to an associated subsystem, which may be either external or internal to the SMS Routers, that can provide the desired transformation of the text message. Having been transformed, the message is then direct delivered to the recipient in MT (mobile terminated) form, without passing

through as SMSC. In the event of direct delivery failure the SMSC Router may—

- Retry
- Pass the message to an SMSC over an interface that supports alpha CLI, such as SMPP
- Pass the message to an SMSC adapted to accept MT messages over SS7 for onward delivery, whereas SMSCs normally only accept MO messages for onward delivery
- Pass the message to an SMSC over SS7 for onward delivery, but without an alphanumeric CLI

In an embodiment of the invention, the sender formulates the body of the text message using a syntax that identifies a destination MSISDN number, the desired alphanumeric CLI and the message itself. For example, using '.' as a separator, a message might be formulated according to the following specification:

<destination number>.<alpha name>. <message>

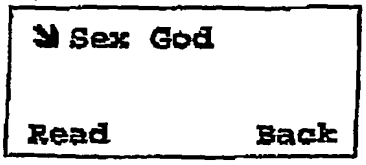
An example message sent from phone number +44 7803 760123 according to this specification could be:

07890123456.SexGod.Meet at 7:30!

In a preferred embodiment, this message is then sent to a common shortcode or long service number, which enables the network to easily identify the message as one requiring a certain transformation process.
The message will then be delivered to the entered MSISDN 07890123456 but will arrive and be displayed as being sent from 'SexGod' without any such entry ever having been entered in the recipient's phone book.

Although anonymous services are also possible using these techniques, a preferred embodiment also adds the sender's real MSISDN on the end of the message.

The complete received message in a preferred embodiment looks like this:
The initial alert screen:



Upon opening the message:

```
Meet at 7:30!
+447803760123

Options     Back
```

It is important to note that the message length, which is limited to 160 characters in GSM, is not increased by the described transformation. This is because the destination phone number (which may be in national or international format) in the original message plus the two '.' characters are all stripped from the message during the transformation process, and are replaced by the sender's real MSISDN that is added on the end of the message in international format. The resulting message length is always the same length or shorter that that originally sent.

In an alternative embodiment, rather than sending the message to a specific service number or short code in order to cause the network to apply the desired transformation, the need for transformation could be signalled by a syntactic requirement in the body of the message. For example, starting a message with a '#' character could be used as the flag to indicate that the transformation is required. This has the benefit that the message may now be sent to the recipient's number instead of to a service number. In either case the handset's phone book facility may be used as normal to look up and use the appropriate destination number. This means that the destination number does not need to be entered into the message. However there are some disadvantages to this latter approach—

1. The network must examine the content of every message, instead of just those addressed to the service number, to determine whether the transformation is required.
2. If the requirement to add the true MSISDN of the sender on to the end of the message is retained, then the message length may grow beyond the maximum length for a single message, and need to be split into two messages.

A key aspect of any implementation of the invention is the capability to identify a message as a message to be transformed. A preferred embodiment achieves this by requiring that all messages to be transformed are sent to a particular service number or short code. An alternative embodiment uses an identifier in the body of the message, such as a prescribed arrangement of one or more characters. A feature of the SMS router is its ability to examine all aspects of a text message, including addresses, content and user settings.

Using these capabilities, services may be defined which make use of, for example, content keywords, numeric addresses or alpha destination addresses as triggers to activate certain transformations and to pass on the transformed messages either directly to the destination or via an SMSC as appropriate to the application.

Referring to Figure 1, users are connected to a mobile telephone network either directly ('on-net') or indirectly whilst roaming ('off-net') and are able to send mobile originated text messages via an MSC (1). The MSC is connected to an SMS Router (2) which is able to examine message characteristics. Dependent upon characteristics of the message the SMS router is operable to identify and select certain messages. These selected messages may be transformed by a message transformation means (3), which may be either fully or partly internal or external to the SMS router. If the transformation means is external to the SMS Router, it may involve interaction with one or more third party equipments. The apparatus is further operable to transmit the transformed message directly to the recipient via an MSC (4). An SMSC may be used as a fallback in the event of failure to deliver directly as described above, or alternatively (2) or (3) may incorporate a retry capability, which may ease integration with billing systems.

Billing issues may also be handled by the SMS Router if not already handled by the MSC. The SMS Router may generate billing records for post-pay customers, and may also interrogate and debit a pre-payment system before allowing access for pre-pay customers. Known techniques may be used to ensure that in the event that the message is passed back to the SMSC, the customer is not billed twice.

The invention could be implemented on platforms other than SMS Routers, noting that maximum advantage is gained by recognising messages while still in the MO domain, and before any storage by the network.

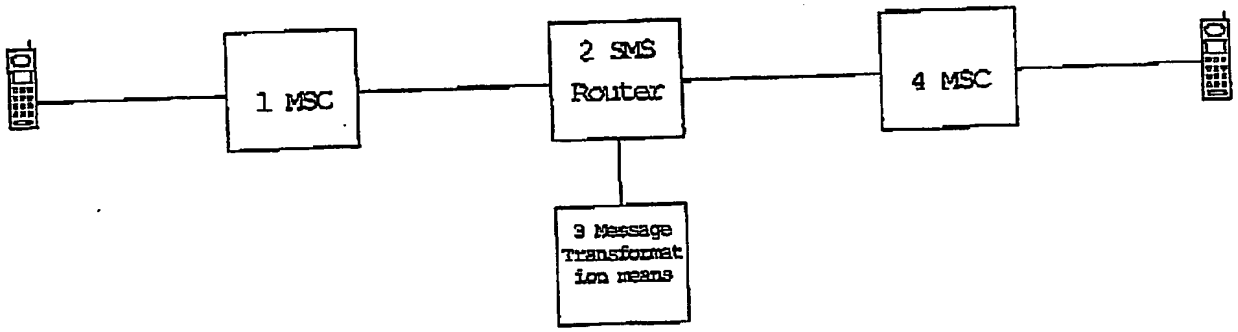


Figure 1